



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.		
10/516,949	12/16/2004	Minoru Matsuzawa	040667	4976		
23850	7590	10/30/2008	EXAMINER			
KRATZ, QUINTOS & HANSON, LLP 1420 K Street, N.W. Suite 400 WASHINGTON, DC 20005				JOLLEY, KIRSTEN		
ART UNIT		PAPER NUMBER				
1792						
MAIL DATE		DELIVERY MODE				
10/30/2008		PAPER				

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)
	10/516,949	MATSUZAWA ET AL.
	Examiner	Art Unit
	Kirsten C. Jolley	1792

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 03 July 2008.
 2a) This action is **FINAL**. 2b) This action is non-final.
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1,3-9 and 11-16 is/are pending in the application.
 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
 5) Claim(s) _____ is/are allowed.
 6) Claim(s) 1,3-9 and 11-16 is/are rejected.
 7) Claim(s) _____ is/are objected to.
 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
 10) The drawing(s) filed on _____ is/are: a) accepted or b) objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ . |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ . | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| | 6) <input type="checkbox"/> Other: _____ . |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed July 3, 2008 have been fully considered but they are not persuasive.

With respect to the rejections over JP '010, Applicant argues that JP '010 teaches that only an intermediate cup wall 30 is driven up and down, whereas claims 1 and 9 have been amended to require that a plurality of fences is driven upwards. The Examiner disagrees. While JP '010 illustrates only two cups (and one intermediate cup wall) in Figures 4 and 5, JP '010 teaches in paragraph [0045] that use of two cups is merely exemplary and that three or more cups can be used and arranged concentrically to collect the different kinds of treatment solutions. In JP '010's embodiment where the intermediate wall between cups is movable to form the cups, the formation of three or more cups would necessarily require the use of two or more movable fences.

Applicant also argues that intermediate cup wall 30 is driven *up and down* to separately collect two kinds of treatment solutions, whereas the present claims require that the plurality of fences is driven upwards. First it is noted that JP '010's cup wall is only driven upward during processing, and is then returned downward after processing is completed. Second, the Examiner notes that Applicant's broad "comprising" claim language in claims 1 and 9 broadly read on the inclusion of additional process steps. The transitional term "comprising," which is synonymous with "including," "containing," or "characterized by," is inclusive or open-ended and does not exclude additional, unrecited elements or method steps. *Moleculon Research Corp. v. CBS, Inc.*,

793 F.2d 1261, 229 USPQ 805 (Fed. Cir. 1986); *In re Baxter*, 656 F.2d 679, 686, 210 USPQ 795, 803 (CCPA 1981); *Ex parte Davis*, 80 USPQ 448, 450 (Bd. App. 948) (“comprising” leaves “the claim open for the inclusion of unspecified ingredients even in major amounts”).

With respect to the rejections over JP ‘404, Applicant argues that JP ‘404 teaches that only a separation plate 41 is driven up and down, whereas claims 1 and 9 have been amended to require that a plurality of fences is driven upwards. The Examiner disagrees. While JP ‘404 illustrates only two cups (and one intermediate fence/separation plate) in Figures 1 and 2, JP ‘404 teaches in paragraph [0140] that use of two cups for developing solution and water is merely exemplary and that “two or more” cups can be used to collect the different kinds of etching reagents for example. In JP ‘404’s embodiment where the intermediate wall between cups is movable to form the cups, the formation of more than two (three or more) cups would necessarily require the use of two or more movable fences.

Applicant also argues that separation plate 41 is driven *up and down* to separately collect two kinds of treatment solutions, whereas the present claims require that the plurality of fences is driven upwards. First it is noted that JP ‘404’s separation plate is only driven upward during processing, and is then returned downward after processing is completed. Second, the Examiner notes that Applicant’s broad “comprising” claim language in claims 1 and 9 broadly read on the inclusion of additional process steps. The transitional term “comprising,” which is synonymous with “including,” “containing,” or “characterized by,” is inclusive or open-ended and does not exclude additional, unrecited elements or method steps. *Moleculon Research Corp. v. CBS, Inc.*,

793 F.2d 1261, 229 USPQ 805 (Fed. Cir. 1986); *In re Baxter*, 656 F.2d 679, 686, 210 USPQ

795, 803 (CCPA 1981); *Ex parte Davis*, 80 USPQ 448, 450 (Bd. App. 948) (“comprising” leaves “the claim open for the inclusion of unspecified ingredients even in major amounts”).

Claim Objections

2. Claims 1, 3-9, and 11-16 are objected to because of the following informalities:

In claim 1, line 15, and claim 9, line 11, the phrase “collected respectively by corresponding said each collection tank” is objected to because it is awkward language and the use of “corresponding” in this phrase is confusing. The Examiner questions whether the phrase should instead read --collected respectively by said each corresponding collection tank--.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 3-5, 7, 9, 11-13, and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 2000-183010 A.

JP ‘010 discloses a substrate treatment apparatus and corresponding method for using the apparatus comprising: a substrate holding unit 11 holding a substrate W to be treated; a substrate spinning unit spinning the substrate to be treated held on said substrate holding unit; a treatment solution supply unit 14a and 14b for supplying a plurality of treatment solutions onto the

substrate to be treated; and a treatment solution collection unit having a plurality of collection tanks 15 and 16 placed in a manner to surround a periphery of the substrate to be treated held on said substrate holding unit, and provided to separately collect by kind the treatment solutions scattered by said substrate spinning unit from the substrate to be treated, wherein said treatment solution collection unit collects the treatment solution by one of the collection tanks with inlets of the other collection tanks closed (see Figures 4-5 and paragraphs [0032]-[0040] of the translation), and wherein a plurality of fences sets each collection tank and a movable fence 30 is driven upwards to form a conduit which separately collects treatment solution. While JP '010 illustrates only two cups and one movable intermediate cup wall in Figures 4 and 5, JP '010 teaches in paragraph [0045] that use of two cups is merely exemplary and that three or more cups can be used and arranged concentrically to collect the different kinds of treatment solutions. In JP '010's embodiment where the intermediate wall between cups is movable to form the cups, the formation of three or more cups would necessarily require the use of two or more movable fences/cup walls.

As to claims 3 and 11, Figure 4 illustrates a position of the substrate W that is located above positions of the fences which are not collecting the treatment solution.

As to claims 4 and 12, Figures 5 illustrates fences arranged in overlapping order, in a manner to close the inlets of the collection tanks. The treatment solution collection unit performs collection in order, starting from the collection tank at a position farther from the substrate to be treated.

As to claims 5 and 13, the figures illustrate that the fence has a tip portion formed to be a reflective face that is curved to reflect the treatment solution scattered from the substrate W into the selected collection tank.

As to claims 7 and 15, drain units 15b and 16b drain the treatment solutions.

5. Claims 1-5, 7, 9-13, and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 11-309404 A.

JP ‘404 discloses a substrate treatment apparatus and corresponding method for using the apparatus comprising: a substrate holding unit 14 holding a substrate 17 to be treated; a substrate spinning unit spinning the substrate to be treated held on said substrate holding unit; a treatment solution supply unit 18 and 19 for supplying a plurality of treatment solutions onto the substrate to be treated; and a treatment solution collection unit having a plurality of collection tanks 26 and 27 placed in a manner to surround a periphery of the substrate to be treated held on said substrate holding unit, and provided to separately collect by kind the treatment solutions scattered by said substrate spinning unit from the substrate to be treated, wherein said treatment solution collection unit collects the treatment solution by one of the collection tanks with inlets of the other collection tanks closed (see Figures 1-2), and wherein a plurality of fences sets each collection tank and a movable separation plate 41 is driven upwards to form a conduit which separately collects treatment solution. While JP ‘404 illustrates only two cups and one movable fence/separation plate in Figures 1 and 2, JP ‘404 teaches in paragraph [0140] that use of two cups for developing solution and water is merely exemplary and that “two or more” cups can be

used to collect the different kinds of etching reagents for example. In JP ‘404’s embodiment where the intermediate wall between cups is movable to form the cups, the formation of more than two (three or more) cups would necessarily require the use of two or more movable fences.

As to claims 3 and 11, Figure 1 illustrates a position of the substrate 17 that is located above positions of the fences which are not collecting the treatment solution.

As to claims 4 and 12, Figures 1-2 illustrate fences arranged in overlapping order, in a manner to close the inlets of the collection tanks. The treatment solution collection unit performs collection in order, starting from the collection tank at a position farther from the substrate to be treated.

As to claims 5 and 13, Figures 1-2 illustrate that the fence has a tip portion formed to be a reflective face that is curved to reflect the treatment solution scattered from the substrate 17 into the selected collection tank.

As to claims 7 and 15, drain units 32 and 31 drain the treatment solutions. It would have been obvious to have incorporated additional drain units for additional cups with the expectation of similar and successful results.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

- (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

Art Unit: 1792

having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 6, 8, 14 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2000-183010 A.

As to claims 6 and 14, JP '010 discloses exhaust port 35 for exhausting the inside of both cups 15 and 16. Thus JP '010 teaches using a single exhaust port/unit instead of separate ports. It would have been obvious for a design engineer having ordinary skill in the art to have provided separate exhaust ports for each cups instead of a single exhaust port with the expectation of similar results and improved separation of exhaust gases.

As to claims 8 and 16, JP '010 lacks teaching use of a cleaning unit to clean the inside of the collection tanks. It is well known in the spin coating art that periodic cleaning of the coating apparatus is necessary in order to prevent buildup of treatment material on the inside of the apparatus because buildup could disturb the airflow inside the apparatus and/or potentially redeposit on a substrate. It would have been obvious to one having ordinary skill in the art to have provided a cleaning unit to clean the inside of the collection tanks to perform such periodic cleaning.

8. Claims 8 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 11-309404 A.

As to claims 8 and 16, JP '404 lacks teaching use of a cleaning unit to clean the inside of the collection tanks. It is well known in the spin coating art that periodic cleaning of the coating apparatus is necessary in order to prevent buildup of treatment material on the inside of the apparatus because buildup could disturb the airflow inside the apparatus and/or potentially

redeposit on a substrate. It would have been obvious to one having ordinary skill in the art to have provided a cleaning unit to clean the inside of the collection tanks to perform such periodic cleaning.

9. Claims 6 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 11-309404 A as applied to claims 1 and 9 above, and further in view of JP 2000-183010 A.

As to claims 6 and 14, JP '404 lacks a teaching of including exhaust ports for exhausting inside of its cups. It is well known in the spin coating art to include exhaust units for exhausting gases, separate from the drain units. JP '010 similarly discloses a spin coating apparatus and method which separately collects plural treatment solutions. JP '010 discloses exhaust port 35 for exhausting the inside of both cups 15 and 16. It would have been obvious for a design engineer having ordinary skill in the art to have included an exhaust port in the spin coating apparatus of JP '404 in order to remove exhaust/contaminated gas in the apparatus, particularly upon seeing the teaching of JP '010, and further to have provided separate exhaust ports for each cup instead of a single exhaust port with the expectation of improved separation of exhaust gases.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. It is noted that US 5,945,161 (Figure 11) and US 5,965,200 (Figure 11) additionally teach the separate collection of plural treatment solutions.

11. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kirsten C. Jolley whose telephone number is 571-272-1421. The examiner can normally be reached on Monday to Tuesday and Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on 571-272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Kirsten C Jolley/
Primary Examiner, Art Unit 1792

kcj